PROGRAM: NATIONAL DIPLOMA
ENVIRONMENTAL HEALTH

SUBJECT: EPIDEMIOLOGY III

CODE: **GEP 32-1**

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DURATION: 3 HOURS

WEIGHT: 50:50

TOTAL MARKS: **150**

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MODERATORS: DR. L. KUONZA

NUMBER OF PAGES: 7 PAGES,

INSTRUCTIONS TO STUDENTS:

1. ANSWER ALL THE QUESTIONS.

2. READ YOUR QUESTIONS CAREFULLY. YOU WILL BE PENALISED IF YOUR ANSWERS ARE NOT PROPERLY STRUCTURED AND NUMBERED.

LEAVE SPACE IN BETWEEN THE ANSWERS.

QUESTION 1

Multiple choice

Write the correct answer in your examination answer sheet/script, by choosing the correct answer. In other words a, b, c, or d. Only one answer per question.

1.1 An intrinsic factor that influences an individual's exposure, susceptibility/ response to a causative agent: (1)

(a) Agent

(b) Host

(c) Environmental

(d) Determinant

1.2 A study that compares the frequency of the outcome in exposed and not exposed participants. (1)

(a) Intervention study

(b) Descriptive study

(c) Observational study

(d) Cohort study

1.3 The measure of association that quantifies the relationship between an exposure and health outcome (1)

(a) Attribute ratio

(b) Proportional ratio

(c) Mode

(d) Odds ratio

1.4 The proven ability of a woman to bear children (1)

(a) Fertility

(b) Fecundity

(c) Total fertility rate

(d) Stationery

1.5 The acknowledgement of the right of the individual (study) to determine their own course of action in accordance with their own wishes and plans: (1)

(a) Informed consent
(b) Autonomy
(c) Reliability
(d) Validity

1.6 The process of choosing a section of the population for observation and study rather than the entire population: (1)

(a) Data analysis
(b) Data collection
(c) Sampling
(d) None of the above

1.7 In the data set, (3; 6; 7; 4; 8; 7; 2) 6 represents the: (1)

(a) Interquartile
(b) Median
(c) Mean
(d) Range

1.8 Measure of the speed at which a disease spreads in a specific population a certain period of time: (1)

(a) Rate
(b) Proportion
(c) Morbidity
(d) Morbidity

1.9 A symmetric distribution with a single peak and a bell shape is known as a: (1)

(a) Bimodial
(b) Multimodial
(c) Unimodal
(d) Normal distribution

1.10 Which of the following is not a determinant of a person's fertility: (1)

(a) Education

(b) Age at marriage

(c) Migration

(d) Religion

[10]

QUESTION 2

2.1 Discuss the five (5) major classification of disease (25)

2.2 Discuss the three levels of prevention in primary health care (15)

[40]

QUESTION 3

Conducting a study requires an appropriate study design.

3.1 Discuss the strengths of a case-control study (5)

3.2 Discuss characteristics of a cohort study (5)

3.3 Define, what is a descriptive study (5)

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QUESTION 4

As an Environmental Health Practitioner, assigned at the local municipality. You receive a report of persons that have presented to a local clinic with gastrointestinal illness after attending a function at a school in an area within your jurisdiction. Accordingly, you are required to conduct an investigation.

4.1 How would you describe an outbreak? (3)

4.2 What steps will you take to investigate the outbreak? (20)

4.3 What would be your objective for conducting an outbreak investigation (7)

[30]

QUESTION 5

As an Environmental Health Practitioner, you are require to conduct research.

5.1 Define the concept of ethics in research (3)

5.2 Discuss the underlying principles in research ethics (18)

5.3 As a researcher, you must adhere to ethical and legal considerations. Why is this important? (4)

[25]

QUESTION 6

Surveillance of disease is part of the functions in the scope of practice for environmental health practitioners.

6.1 What is a prevalence? (1)

6.2 What data you may use (or collect) in order to determine the prevalence of specific condition (or disease) in the population? (1)

6.3 What is an incidence? (1)

6.4 What data you may use (or collect) in order to determine the incidence of specific condition (or disease) in the population? (1)

Table 2: Age distribution of Malaria cases, Siyabonga Health District 2001

Age (years)	Number
15	24
16	45
17	43
18	80
19	1
20	33
21	12
22	45

Using the table above:

6.5 What is the mean for age? (2)

6.6 Calculate the median for age (2)

6.7 What is the standard deviation? (4)

6.8 Determine the mode of the data above (2)

6.9 What is the range of data (2)

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QUESTION 7

Using the table answer the following questions:

Basic Vital Statistics	Country A	Country B
Mid-year population	2 100 050	20 568 900
Total deaths	12 800	19 440
Live births	98 800	400 680
Infant deaths	8 100	8 050
Still births	1 000	2 000
Maternal deaths	985	1 625
Selected cause-specific deaths		
Diarrhoeal disease	845	164
Measles	143	17
Heart disease	690	3675

Calculate the following rates using the information provided in the table above:

7.1 Crude death rate for country A and B (2)

7.2 Birth rate for country A and B (2)

7.3 Cause-specific death rates of country A and B for:

7.3.1 Diarhoeal disease (2)

7.3.2 Measles (2)

7.4 Infant mortality rate for country A and B (2)

7.5 Based on the calculations, what type of countries do you think best describes the profiles of each countries (A and B)? Give a motivation for your answer. (4)

[14]

TOTAL MARKS 150